

ICOM

INSTRUCTION MANUAL

VHF MARINE TRANSCEIVER
IC-M15

This device complies with Part 15 of the FCC rules. Operation is subject to the condition that this device does not cause harmful interference.

Icom Inc.

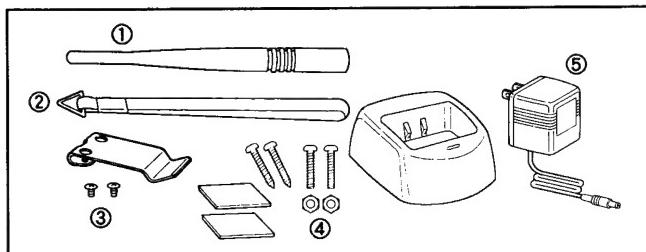


IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL – This instruction manual contains important safety and operating instructions for the IC-M15.

UNPACKING



Accessories Included with the IC-M15:

	Qty.
① Flexible antenna (FA-S54V)	1
② Handstrap	1
③ Belt clip and screws	1 set
④ Battery charge adapter (AD-43), screws and inserts	1 set
⑤ AC adapter (BM-95U/V)	1

The CM-138 Ni-Cd battery pack comes attached to the transceiver.

CAUTIONS

MAKE SURE the battery pack is securely attached to the transceiver and that the battery pack is dry before attachment. Exposing the inside of the transceiver to water will result in serious damage to the transceiver.

KEEP the transceiver out of the reach of children.

KEEP the transceiver at least 1 m away from the ship's compass.

NEVER charge battery packs except in the methods described in this manual.

AVOID exposing the transceiver to direct sunlight for long periods of time.

AVOID using the transceiver in areas with temperatures below -20°C or above +60°C.

BE CAREFUL! The IC-M15 is water-proof to a depth of 1 m only. At depths greater than 1 m, damage may result.

After exposure to saltwater, clean the transceiver thoroughly with fresh water to avoid corrosion.

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■ Operating rules

• PRIORITIES

- 1) Read all rules and regulations pertaining to priorities and keep an up-to-date copy handy. Safety and distress calls take priority over all others.
- 2) You must monitor channel 16 when you are not operating on another channel.
- 3) False or fraudulent distress calls are prohibited under law.

• PRIVACY

- 1) Information overheard but not intended for you cannot lawfully be used in any way.
- 2) Indecent or profane language is prohibited.

• RADIO LICENSES

(1) SHIP STATION LICENSE

When your craft is equipped with a VHF FM transceiver, you must have a current radio station license before using the transceiver. It is unlawful to operate a ship station which is not licensed.

Inquire through your dealer or the appropriate government agency for a Ship-Radiotelephone license. This license includes the call sign which is your craft's identification for radio purposes.

(2) OPERATOR'S LICENSE

A Restricted Radiotelephone Operator Permit is the license most often held by small vessel radio operators when a radio is not required for safety purposes. You can usually obtain this permit by mail.

The Restricted Radiotelephone Operator Permit must be posted near the transceiver or be kept with the operator. Only a licensed radio operator may operate a transceiver.

However, non-licensed individuals may talk over a transceiver if a licensed operator starts, supervises, ends the call and makes the necessary log entries.

A current copy of the applicable government rules and regulations is usually required to be on hand.

■ Accessory attachment

◆ FLEXIBLE ANTENNA

Insert the base of the flexible antenna into the antenna connector; then rotate the flexible antenna in a clockwise direction until it is securely fastened to the transceiver.

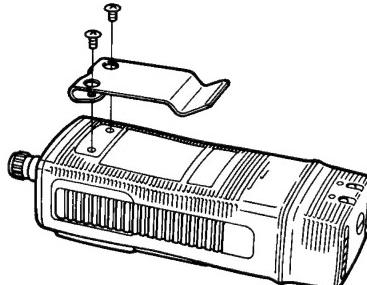
CAUTION: Transmitting without an antenna may damage the transceiver.



◆ BELT CLIP

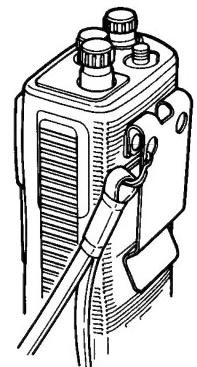
Attach the belt clip using the supplied metal screws. Conveniently attaches to your belt.

CAUTION: NEVER use screws other than the supplied ones.



◆ HANDSTRAP

Attach the handstrap to the belt clip as indicated in the diagram below. Facilitates carrying.



■ Cautions

NEVER incinerate used battery packs. Internal battery gas may cause an explosion.

NEVER immerse the battery pack in water. If the battery pack becomes wet, be sure to wipe it dry BEFORE attaching it to the transceiver.

NEVER short terminals of the battery pack. Internal components may become damaged. Also, current may flow into nearby metal objects so be careful when placing battery packs in handbags, etc.

■ Charging notes

- The transceiver must be turned OFF when charging a battery pack attached to the transceiver. Failure to do so may damage the transceiver.
- Charging may not be successful in extreme cold (under 10°C ; +50°F) or extreme heat (over +40°C ; +104°F).
- The use of non-Icom battery packs/chargers may impair transceiver performance and invalidate the warranty.

■ Battery life

If your battery pack seems to have no capacity even after being charged, completely discharge it by leaving the power ON overnight. Then, fully charge the battery pack again. If the battery pack still does not retain a charge (or very little), a new battery pack must be purchased.

■ Battery pack removal

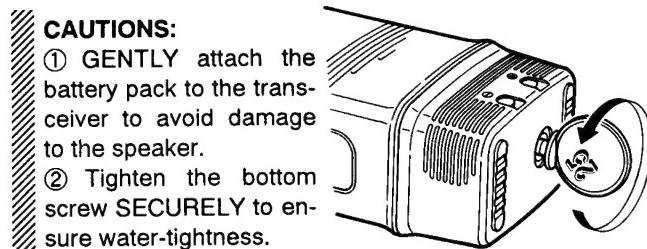
The IC-M15's water-proof construction is only maintained when the battery pack is securely attached to the transceiver body. We recommend battery pack removal only when absolutely necessary i.e. when exchanging the attached battery pack for another one.

To remove: use a coin or flat-head screwdriver to loosen the bottom screw, then slide the battery pack free of the transceiver.

To attach: reverse the above process.

CAUTIONS:

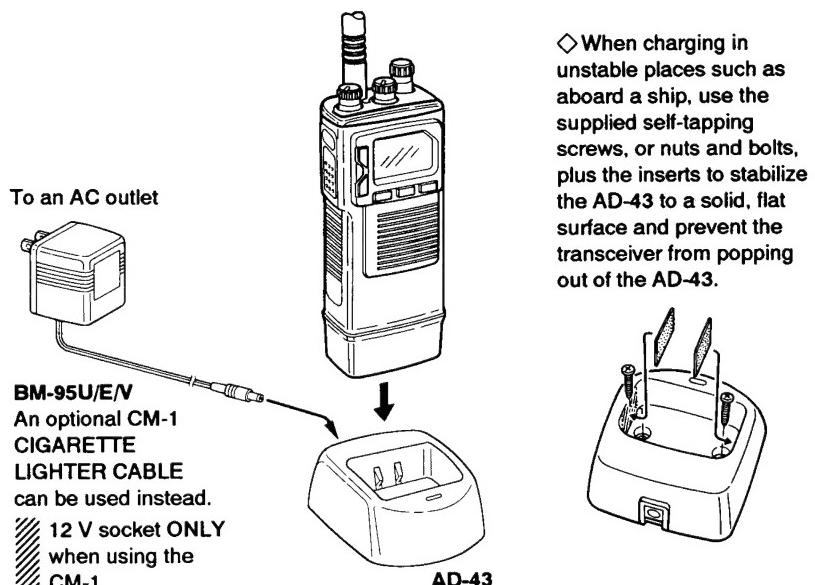
- ① GENTLY attach the battery pack to the transceiver to avoid damage to the speaker.
- ② Tighten the bottom screw SECURELY to ensure water-tightness.



■ Battery charging

- **Using the supplied charge adapter**

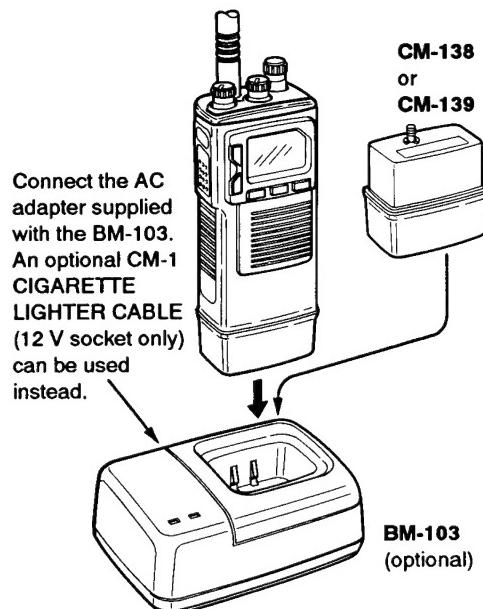
Insert the transceiver and attached battery pack into the charging slot of the AD-43.



Charging time: 15 to 20 hrs. (approx.)

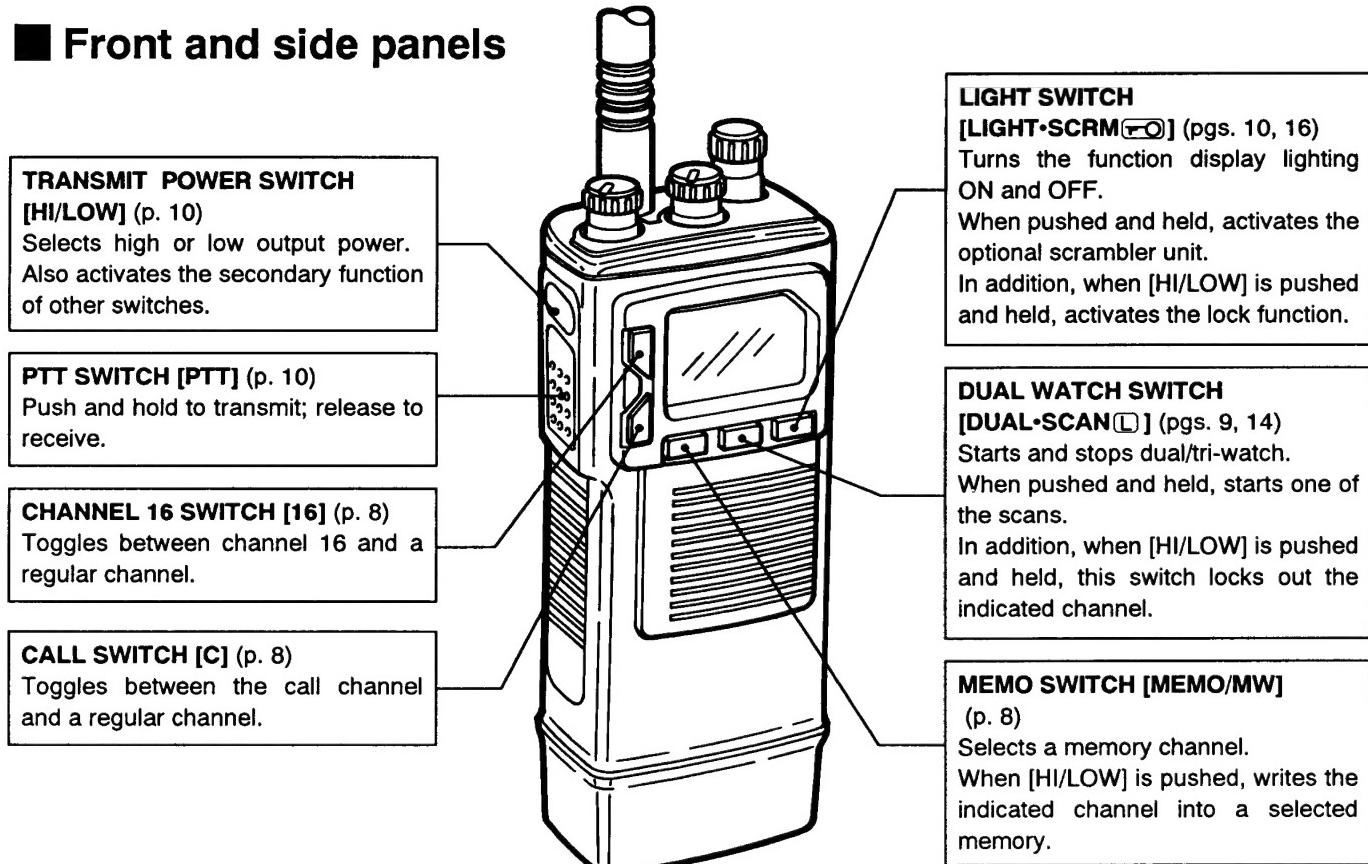
- **Using an optional BM-103**

Insert the transceiver and attached battery pack or a battery pack only into the charging slot of the BM-103.

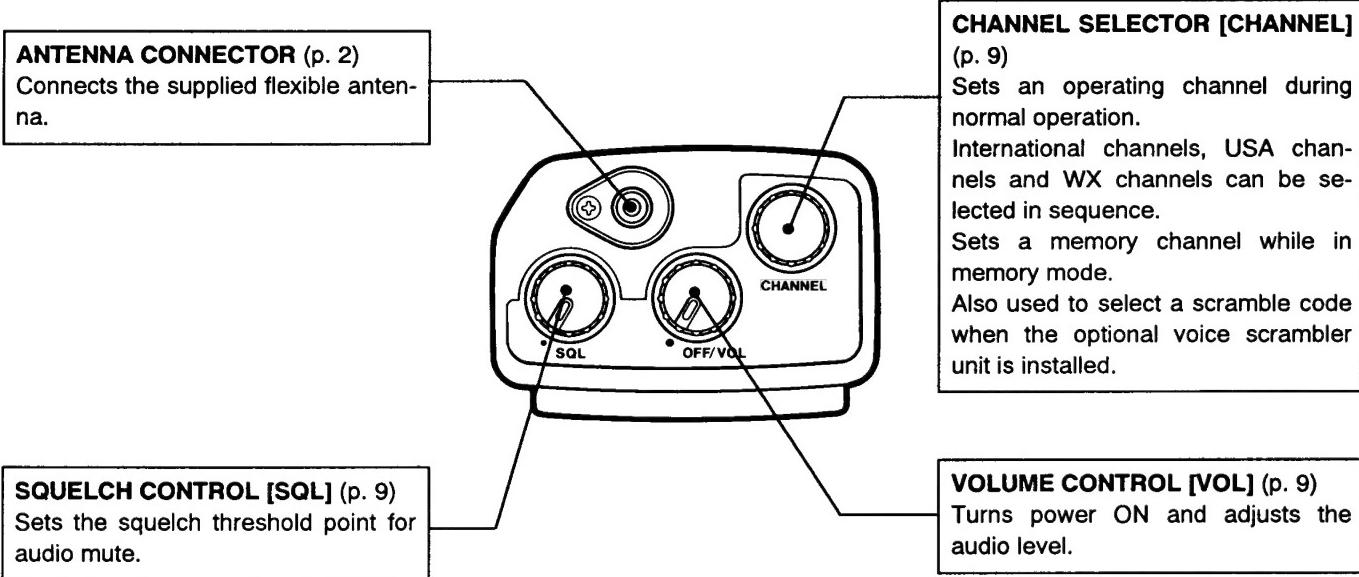


Charging time: 1 to 2 hrs. (approx.)

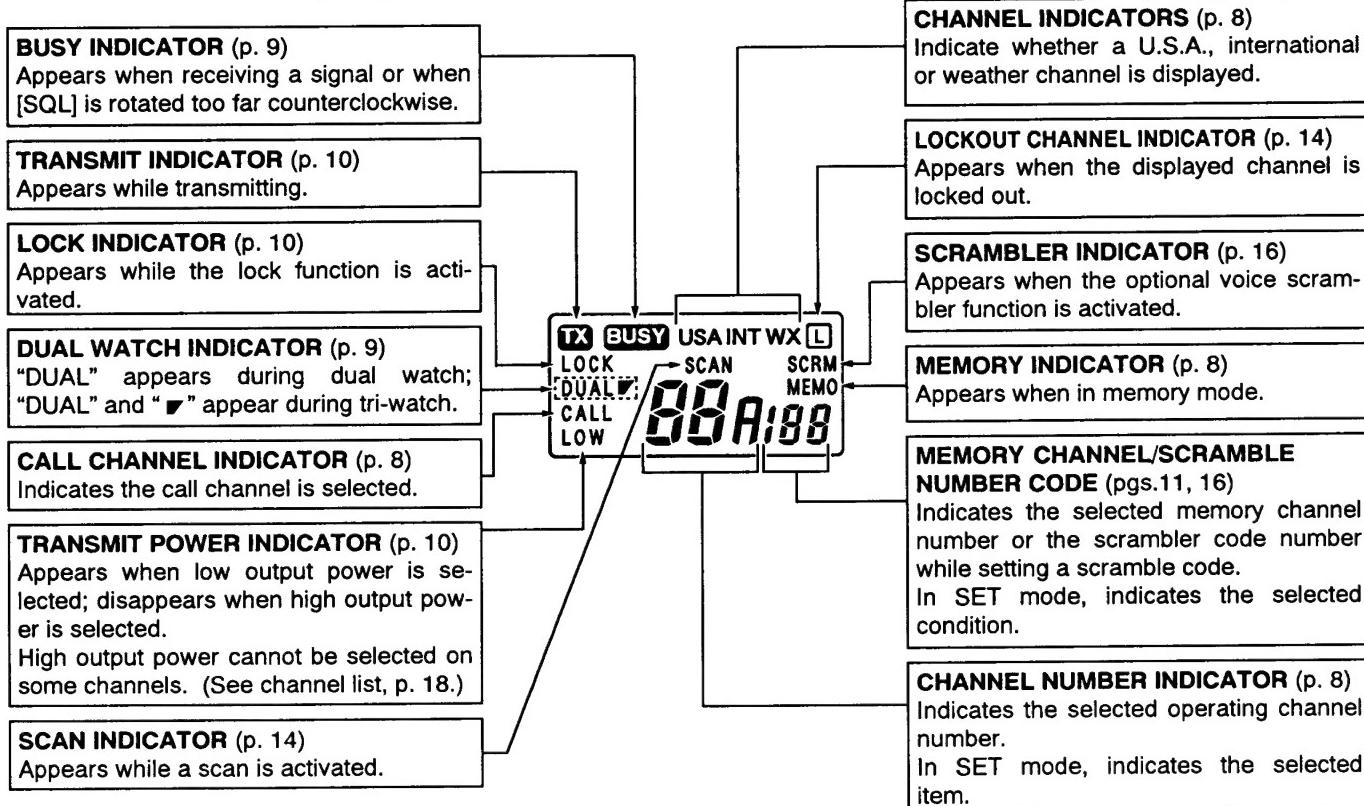
■ Front and side panels



■ Top panel



■ Function display



■ Channel selection

◇ Channel 16

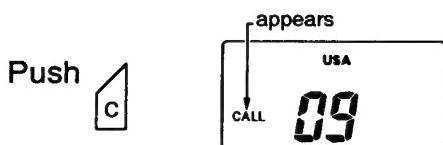
Channel 16 is the distress channel. It is used for establishing initial contact with another station and for emergency communications. While standing by you are required to monitor channel 16.

Push 



◇ Call channel

The call channel is used to store your most often-used channel for quick recall. In addition, the call channel is monitored during tri-watch. The default for the call channel is channel 9.

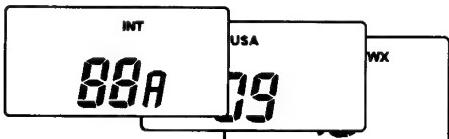


- See page 11 for call channel programming.

◇ Regular channels

There are 85 INT, 58 USA and 10 WX channels. Establish initial contact on channel 16, then move to an agreed upon channel for communications. Some channels can only transmit at low power (see the channel list, p. 18).

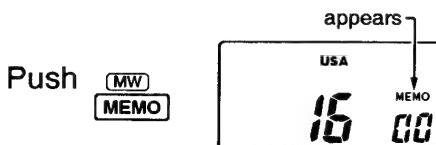
Push  twice



- Pushing [C] or [MEMO] twice also selects a regular channel.
- Rotate the channel selector to set the desired channel.
- INT, U.S.A. and WX channels can be selected in sequence.

◇ Memory channels

24 memory channels are used to store often-used frequencies for easy recall and scanning. After shipping from the factory only memory channel 00 is programmed.

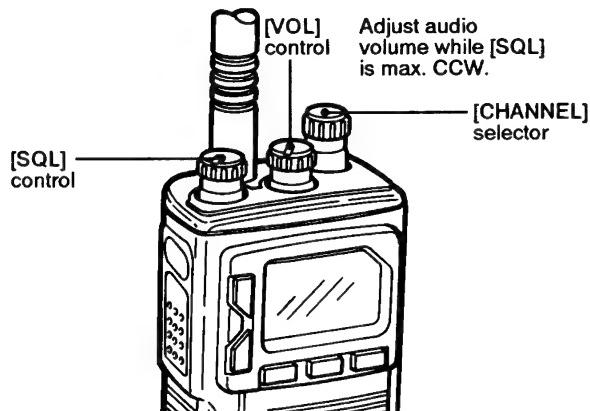


- Rotate the channel selector to set the desired memory channel.
- See p. 11 for memory channel programming.

3 BASIC OPERATION

■ Receiving

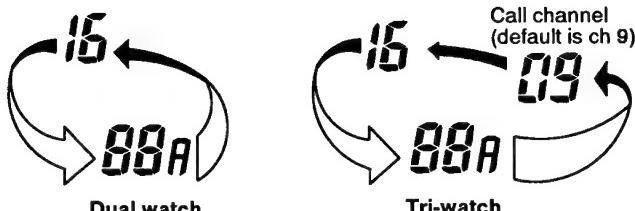
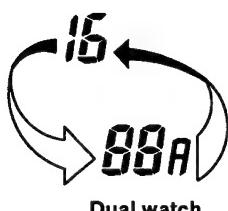
- 1) Rotate [VOL] clockwise to turn power ON.
- 2) Rotate [SQL] fully counterclockwise.
- 3) Adjust the audio to a suitable level using [VOL].
- 4) Rotate [SQL] clockwise until audio noise is just muted.
- 5) Rotate [CHANNEL] to set the desired channel for receiving.
 - When receiving a signal, **BUSY** appears and audio is emitted from the speaker.



■ Dual watch/tri-watch

This function monitors channel 16 (and the call channel in the case of tri-watch) while waiting on a selected channel. Set the transceiver for tri- or dual watch in SET mode depending on your preference. (See p. 12.)

- 1) Set your desired receive channel. See p. 8.
 - If the call channel is selected, only dual watch is possible.
- 2) Push [DUAL] to activate the watch.
 - When a signal is received on Ch 16 the watch pauses until the signal disappears.
 - When a signal pauses on the call channel, Ch 16 is still monitored.
- 3) Push [DUAL] to cancel the watch.



■ Transmitting

CAUTION: Transmitting without an antenna may damage the transceiver.

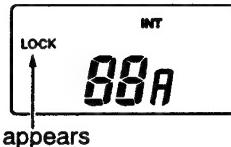
Set the transceiver as for receiving, then:

- 1) Set the desired channel using [CHANNEL].
- 2) Push [HI/LOW] to select the output power.
 - "LOW" appears when low power is selected.
 - Choose low power to conserve battery power; choose high power for longer distance communications.
- 3) Push and hold [PTT] to transmit.
 - **TX** appears.
 - Some channels are for low power output only. (See channel list, p. 18).
 - To ensure privacy, use the voice scrambler function when transmitting. An optional UT-79 must be installed.
- 4) Speak into the microphone.
 - DO NOT hold the transceiver too closely to your mouth or speak too loudly. This may distort the signal.
- 5) Release [PTT] to receive.

■ Lock function

This function electronically locks all keys and switches to prevent accidental frequency changes and function access.

- 1) While pushing [HI/LOW], push [LIGHT•SCRIM ].
 • Only [PTT], [HI/LOW] and [LIGHT] are functional.



appears

- 2) To cancel the function, repeat step 1 above.
 • "LOCK" disappears from the function display.

■ Function display backlighting

This is convenient for nighttime operation.

- 1) Push [LIGHT] to turn the function display backlighting ON.
 • The backlighting automatically turns OFF after 5 sec. if no other keys or switches are pushed during that time.
 • To conserve battery power, use the backlighting only when necessary.
- 2) To turn the function display backlighting OFF before 5 sec. have elapsed, push [LIGHT] again.

■ Memory channels

◇ To program:

1) Push [MEMO] to select a memory channel.

2) While pushing [HI/LOW], push [MEMO•MW].

- "MEMO" and the memory channel number flash.



3) Rotate [CHANNEL] until the desired memory appears.



4) Push [MEMO] again.

- Channel number flashes.



5) Rotate [CHANNEL] until the desired channel appears.



6) While pushing [HI/LOW], push [MEMO•MW] to complete programming.

- Channel number stops flashing.



■ Call channel

◇ To program:

1) Push [C] to select the call channel.

2) While pushing [HI/LOW], push [C].

- The call channel flashes.



3) Rotate [CHANNEL] until the desired channel appears.



4) While pushing [HI/LOW], push [C] again to complete programming.

- The call channel stops flashing.

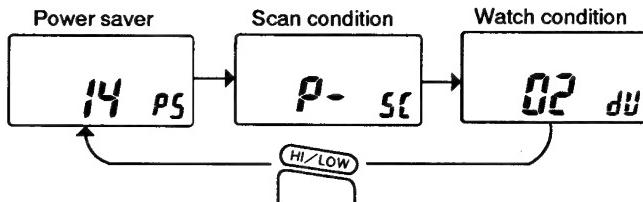


■ SET mode programming

SET mode is used to change the conditions of 3 transceiver functions: the power saver function, the dual/tri-watch function and the scan function.

- 1) Turn power OFF.
- 2) While pushing [HI/LOW], turn power ON and continue pushing [HI/LOW] until the display appears.
- 3) After the display appears, release [HI/LOW].
- 4) Push [HI/LOW] to select the desired item, if necessary.
- 5) Rotate [CHANNEL] to select the desired condition of the item as shown in the table at right.
- 6) To exit SET mode, push [16].
 - Turning power OFF, then ON again also exits SET mode.

These displays show the default settings.



■ SET mode items

DISPLAY	CONDITION	COMMENT
00 ps	Power saver OFF	
14 ps	Power saver duty cycle 1 : 4	The power saver function helps conserve battery power by automatically resting the receiver circuit when the transceiver is idle. For maximum battery conservation, choose the highest duty cycle:
18 ps	Power saver duty cycle 1 : 8	1 : 8
P- sc	Priority scan	Select priority scan if you want to monitor the distress channel (16) while scanning.
L - sc	Normal scan	
02 du	Dual watch operation	Choose tri-watch if you want to monitor the call channel in addition to channel 16 and a selected channel.
03 du	Tri-watch operation	

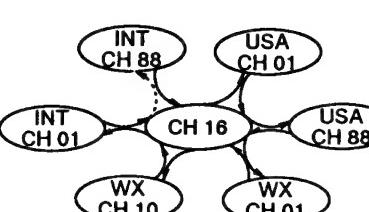
■ Scan types

Scanning is an efficient way to locate signals quickly over a wide frequency range. The IC-M15 has 4 scan types:

Priority scans search through all channels/memory channels in sequence while monitoring channel 16. When a signal is detected on channel 16, scan pauses until the signal disappears; when a signal is detected on a channel other than channel 16, scan becomes dual watch until the signal disappears.

- Priority regular scan
- Priority memory scan
- Normal regular scan
- Normal memory scan

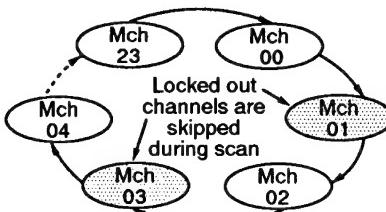
Priority scan (example: regular channels)



Scan pauses when a signal is detected on ch 16.

Normal scans, like priority scans, search through all channels/memory channels in sequence. However, unlike priority scan, channel 16 is only checked in sequence as other channels/memory channels are.

Normal scan (example: memory channels with lockout)



MEMO and a memory channel appear during memory scan.

NOTE: Choose either priority or normal scan in SET mode (see p. 12).

■ Starting a scan

Set priority scan or normal scan in advance using SET mode (see p. 12).

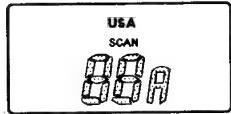
- 1) Make sure channel 16 or the call channel is not selected.
 - Select a regular channel or memory channel (see p. 8).
- 2) Push and hold [SCAN] for 2 seconds.
 - "SCAN" appears in the function display.
 - When a signal is detected, scan pauses until the signal disappears. (Ch 16 is still monitored during priority scan.)
- 3) To stop the scan, push [SCAN].
 - "SCAN" disappears.
 - Pushing [16], [C] or [MEMO] also stops the scan.

Starting a scan (example — normal scan of regular channels):

Push [16], [C] or [MEMO] to select a regular channel if necessary.



Push for 2 secs. Scan starts



Scan pauses when receiving a signal and audio is emitted.



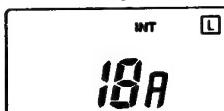
Push to stop the scan.



■ Channel lockout

For more efficient scanning, set unwanted channels as lockout channels. Channels set as lockout channels will be skipped during scanning. Channel lockout is assigned to regular channels and memory channels independently.

- 1) Select the channel to be locked out (either a regular channel or a memory channel).
 - Channel 16 or the call channel CANNOT be locked out.
- 2) While pushing [HI/LOW], push [DUAL·SCAN]  .
 - "  " appears in the function display and the channel is locked out.
- 3) To unlock a channel, repeat step 2) above.

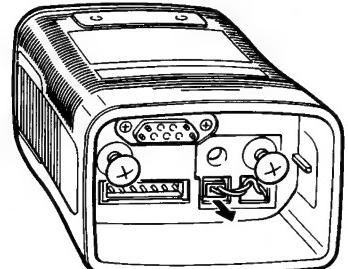


This example shows a regular channel locked out.

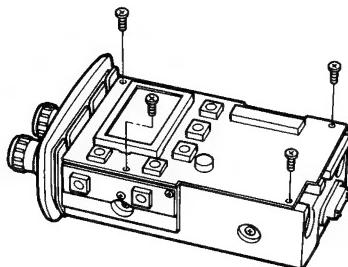
■ Installation

Installing the optional UT-79 scrambler unit into the IC-M15 requires partial disassembly of the transceiver. Incorrect reassembly after removing the outer case may ruin its water-proof rating. Have your Icom Dealer install the scrambler unit for you as outlined below.

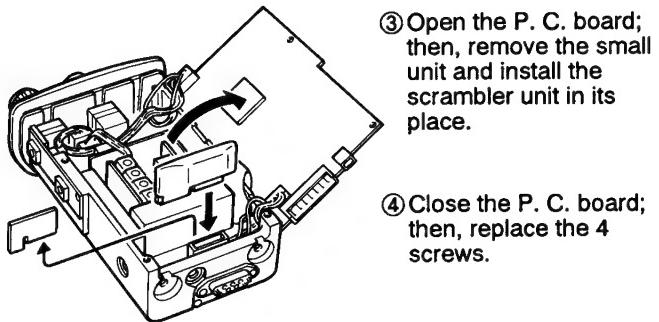
After removing the battery pack and flexible antenna:



- ① Unplug the connector, loosen the 2 bottom screws; then remove the case.



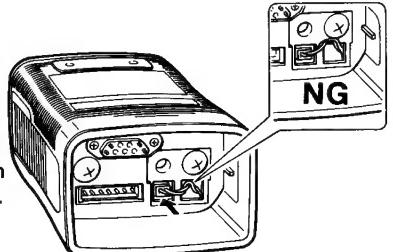
- ② Remove the 4 P. C. board screws.



- ③ Open the P. C. board; then, remove the small unit and install the scrambler unit in its place.
- ④ Close the P. C. board; then, replace the 4 screws.

- ⑤ Before reattaching the case, apply silicone grease to the upper inside of the transceiver case.
 - Recommended silicone grease:
Manufacturer — Shin-Etsu Chemical; type — G-501.

- ⑥ Reassemble the transceiver.
 - Make sure the connector cables are tucked inside the opening for protection from the battery pack.



CAUTION: Make sure the 2 bottom screws are securely tightened to ensure that the transceiver remains water-tight and no water is able to seep inside the casing.

■ Activating the scrambler

The optional voice scrambler provides private communications. In order to receive or send scrambled transmissions you must first activate the scrambler function. To activate the function:

- 1) Push and hold [SCRM] for 2 seconds.
 - The transceiver emits 2 beeps and "SCRM" appears in the function display.
- 2) To turn the scrambler function OFF, repeat step 1).
 - The transceiver emits 2 beeps and "SCRM" disappears from the function display.



NOTE: The voice scrambler function CANNOT be activated on Channel 16.

■ Programming codes

There are 128 codes available for programming. In order to understand one another, all transceivers in your group must have the same code programmed into the channel you are communicating on.

- 1) Select the channel you wish to program a code into.
 - Channel 16 cannot be selected.
- 2) Make sure the scramble function is OFF, then push and hold [SCRM] until "SCRM" appears.
- 3) While continuing to push [SCRM], rotate the channel selector to select the desired scramble code.
- 4) Release [SCRM].
 - The scramble code disappears from the function display but remains in effect while the scramble function is activated.

[Example]: Programming scramble code 127.

Push and hold



SCRM
[FO]
LIGHT



After "SCRM"
appears,
rotate:

[CHANNEL]



Set desired scramble code here

Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION	REF.
No power comes ON.	<ul style="list-style-type: none"> The battery is exhausted. Bad connection to the battery pack. 	<ul style="list-style-type: none"> Recharge the battery pack. Check the connection to the transceiver. 	p. 3-4 p. 4
No sound comes from the speaker.	<ul style="list-style-type: none"> [SQL] is turned too far CW. [VOL] is turned completely CCW. 	<ul style="list-style-type: none"> Set [SQL] to the threshold point. Set [VOL] to a suitable level. 	p. 9 p. 9
Transmitting is impossible, or high power cannot be selected.	<ul style="list-style-type: none"> Ch 15, 17 and 70 are for low power only. The battery is exhausted. The output power is set to low. 	<ul style="list-style-type: none"> Change channels. Replace or charge the batteries. Push [HI/LOW] to select high output power. 	p. 10 p. 3-4 p. 10
The displayed channel cannot be changed.	<ul style="list-style-type: none"> Lock function is activated. Channel 16 mode has been selected. Dual/tri-watch has been activated. Scan has been activated. 	<ul style="list-style-type: none"> While pushing [HI/LOW], push [LIGHT ]. Push [16] to return to normal operation. Push [DUAL·SCAN] to cancel dual/tri-watch. Push and hold [DUAL·SCAN] to cancel scan. 	p. 10 p. 8 p. 9 p. 14
Scanning or dual watch/tri-watch does not function.	<ul style="list-style-type: none"> Channel 16 mode has been selected. The squelch is open. 	<ul style="list-style-type: none"> Push [16] to return to normal operation. Rotate [SQL] clockwise. 	p. 8 p. 14
Memory scan does not function	2 or more memory channels must be programmed with channel information	Program 2 or more memory channels with channel information	p. 11
Dual watch functions but tri-watch doesn't or vice versa.	You must set the transceiver to operate one or the other.	Select dual watch or tri-watch operation in SET mode.	p. 12
Receive signal cannot be understood.	<ul style="list-style-type: none"> Optional voice scrambler is turned OFF. Voice scrambling code is not set correctly. 	<ul style="list-style-type: none"> Turn the optional voice scrambler ON. Reset the scrambling code. 	p. 16 p. 16

CHANNEL LIST

9

Channel number		Frequency (MHz)	
INT	USA	Trans-mit	Receive
01		156.050	160.650
01A	01A	156.050	156.050
02		156.100	160.700
02A	02A	156.100	156.100
03		156.150	160.750
03A	03A	156.150	156.150
04		156.200	160.800
04A	04A	156.200	156.200
05		156.250	160.850
05A	05A	156.250	156.250
06	06	156.300	156.300
07		156.350	160.950
07A	07A	156.350	156.350
08	08	156.400	156.400
09	09	156.450	156.450
10	10	156.500	158.500
11	11	156.550	156.550
12	12	156.600	156.600
13	13*	156.650	156.850
14	14	156.700	156.700
15*	15†	156.750	156.750
16	16	156.800	156.800
17*	17*	156.850	156.850
18		156.900	161.500
18A	18A	156.900	156.900

*Low power only †Transmit is inhibited

Channel number		Frequency (MHz)	
INT	USA	Trans-mit	Receive
19		156.950	161.550
19A	19A	156.950	156.950
20	20	157.000	161.800
20A	20A	157.000	157.000
21		157.050	161.850
21A	21A	157.050	157.050
22		157.100	161.700
22A	22A	157.100	157.100
23		157.150	161.750
23A	23A	157.150	157.150
24	24	157.200	161.800
25	25	157.250	161.850
26	26	157.300	161.900
27	27	157.350	161.950
28	28	157.400	162.000
60		156.025	160.625
60A	60A	156.025	156.025
61		156.075	160.675
61A	61A	156.075	156.075
62		156.125	160.725
62A	62A	156.125	156.125
63		156.175	160.775
63A	63A	156.175	156.175
64		156.225	160.825
64A	64A	156.225	156.225

Channel number		Frequency (MHz)	
INT	USA	Trans-mit	Receive
65		156.275	160.875
65A	65A	156.275	156.275
66		156.325	160.925
66A	66A	156.325	156.325
67	67*	156.375	156.375
68	68	156.425	156.425
69	69	156.475	156.475
70*	70*	156.525	156.525
71	71	156.575	156.575
72	72	156.625	156.625
73	73	156.675	156.675
74	74	156.725	156.725
75	75	Guard	Guard
76	76	Guard	Guard
77	77	156.875	156.875
78		156.925	161.525
78A	78A	156.925	156.925
79		156.975	161.575
79A	79A	156.975	156.975
80		157.025	161.625
80A	80A	157.025	157.025
81		157.075	161.675
81A	81A	157.075	157.075
82		157.125	161.725
82A	82A	157.125	157.125

WX channel	Frequency (MHz)	
	Transmit	Receive
01	RX only	162.550
02	RX only	162.400
03	RX only	162.475
04	RX only	162.425
05	RX only	162.450
06	RX only	162.500
07	RX only	162.525
08	RX only	161.650
09	RX only	161.775
10	RX only	163.275

10 SPECIFICATIONS AND OPTIONS

■ Specifications

• GENERAL

Frequency coverage	: Transmit 156–157.5 MHz Receive 156–163 MHz
Mode	: FM (16K0G3E)
Channel spacing	: 25 kHz
Current drain (w/supplied battery pack)	: TX High 3.0 A max. TX Low 1.5 A max. Max. audio 600 mA max. Power saved 15 mA typical (squelched)
Power supply requirement	: CM-138 or CM-139
Frequency stability	: 0.0005% (-20°C to +60°C)
Usable temperature range	: -20°C to +60°C (-4°F to +140°F)
Dimensions (with CM-138)	: 62(W) × 150(H) × 44(D) mm 2.4(W) × 5.9(H) × 1.7(D) in
Weight (with CM-138)	: 460 g (16.2 oz)
Antenna impedance	: 50 Ω (unbalanced)

• TRANSMITTER

Output power	: High 5 W Low 0.7 W
Modulation system	: Variable reactance phase modulation
Max. frequency deviation	: ± 5.0 kHz

• RECEIVER

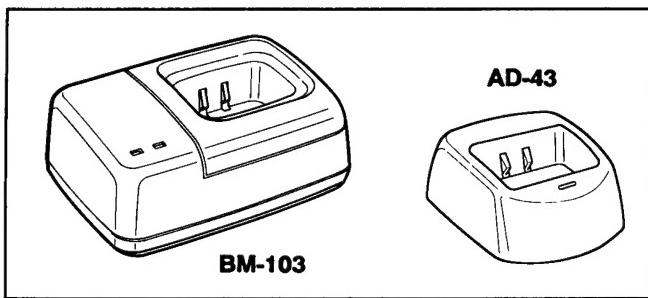
Receive system	: Double-conversion superheterodyne
Sensitivity (12 dB SINAD)	: 0.35 μV
Squelch sensitivity	: Less than 0.3 μV (at threshold)
Audio output power	: 500 mW with an 8Ω load

All stated specifications are subject to change without notice or obligation.

■ Options

Icom offers a wide variety of options to suit your operating needs.

◇ CHARGERS



• AD-43 BATTERY CHARGE ADAPTER

Used for regular charging of battery packs. The same as the supplied one. Charging time: 15 to 20 hrs.

• BM-95U/E/V AC ADAPTER

Connects to an AC outlet for use with the AD-43. The same as the supplied one.

• BM-103 DESKTOP CHARGER

Used for rapid charging of battery packs.

Charging time: 1 to 3 hrs.

• CM-1 CIGARETTE LIGHTER CABLE

Connects to a ship's or vehicle's cigarette lighter socket for use with the BM-103 or AD-43.

◇ BATTERY PACKS

BATTERY PACK	OUTPUT VOLTAGE	CAPACITY	HEIGHT
CM-138	7.2 V	900 mAh	59 mm/2.3 in
CM-139	7.2 V	1200 mAh	72 mm/2.8 in

◇ OTHERS

• FA-S54V FLEXIBLE ANTENNA

Same type as supplied with the transceiver. Has an SMC type connector.

• MB-24 MOUNTING BRACKET

Hanger-type for mounting the transceiver in a vehicle.

• MB-25 MOUNTING BRACKET

Wall-type for mounting on a wall.

• UT-79 VOICE SCRAMBLER UNIT

Ensures private communications. 128 codes available.

Count on us!

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U/A

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